CLAIMS

What is claimed is:

1. A composition for treating squamous cell carcinoma (SCC) comprising an antibody that specifically binds a migration facilitating protein (MFP) comprising a laminin 5 alpha 3 G4 and/or 5 domain or subdomain thereof, and a pharmaceutically acceptable carrier.

2. A composition according to Claim 1, wherein said antibody binds to a MFP comprising a laminin 5 alpha 3 G4 domain.

3. A composition according to Claim 2, wherein said antibody does not bind to an epitope for a BMP-1 cleavage site within said laminin 5 alpha 3 G4 domain or subdomain thereof.

4. A composition according to Claim 1, wherein said antibody binds to a MFP comprising a laminin 5 alpha 3 G5 domain.

5. A composition according to Claim 1, wherein said antibody is a polyclonal antibody.

6. A composition according to Claim 1, wherein said antibody is a monoclonal antibody.

7. A composition according to Claim 1, wherein said SCC is selected from the group consisting of skin cancer, lung cancer, head cancer, gastric cancer, colorectal, throat cancer, cancer of the urinary tract, cancer of the reproductive tract, esophageal cancer, and bronchiogenic carcinoma.

8. A composition according to Claim 1, wherein said MFP has a sequence comprising the amino acid sequence of SEQ ID. No.: 13.

9. A composition according to Claim 1, wherein said MFP has a sequence comprising the amino acid sequence of SEQ ID. No.: 15.

10. A composition according to Claim 1, wherein said MFP has a sequence comprising the amino acid sequence of SEQ ID. No.: 17.

11. A composition according to Claim 1, wherein said MFP has a sequence comprising the amino acid sequence of SEQ ID. No.: 19.

12. A composition according to Claim 1, wherein said MFP has a sequence comprising the amino acid sequence of SEQ ID. No.: 21.

13. A composition according to Claim 1, wherein said MFP has a sequence comprising the amino acid sequence of SEQ ID. No.: 24.

14. A method of treating squamous cell carcinoma (SCC) in a patient comprising administering a therapeutically effective amount of one or more antibodies in a pharmaceutically acceptable carrier, wherein one or more of said antibodies is capable of specifically binding a MFP of a laminin 5 G4 and/or G5 domain or subdomain thereof, and inhibiting SCC tumorigenesis.

15. A method according to Claim 14, wherein said antibody binds to a MFP having a sequence comprising the amino acid sequence of SEQ ID. No.: 13.

16. A method according to Claim 14, wherein said antibody binds to a MFP having a sequence comprising the amino acid sequence of SEQ ID. No.: 15.

17. A method according to Claim 14, wherein said antibody binds to a MFP having a sequence comprising the amino acid sequence of SEQ ID. No.: 17.

18. A method according to Claim 14, wherein said antibody binds to a MFP comprising the amino acid sequence of SEQ ID. No.: 19.

19. A method according to Claim 14, wherein said antibody binds to a MFP comprising the amino acid sequence of SEQ ID. No.: 21.

20. A method according to Claim 14, wherein said antibody binds to a MFP comprising the amino acid sequence of SEQ ID. No.: 24.

21. A method according to Claim 14, wherein said antibody is a polyclonal antibody.

22. A method according to Claim 14, wherein said antibody is a monoclonal antibody.

23. A method according to Claim 14, wherein said SCC is selected from the group consisting of skin cancer, lung cancer, head cancer, gastric cancer, colorectal, throat cancer, cancer of the urinary tract, cancer of the reproductive tract, esophageal cancer, and bronchiogenic carcinoma.

24. A method for diagnosing the presence of SCC comprising the steps of:

a) contacting a sample suspected of comprising neoplastic epithelial cells with an antibody capable of specifically binding a MFP of a laminin 5 G4-5 domain or subdomain thereof,

b) detecting the binding of said antibody to said MFP; and,

c) diagnosing therefrom the presence or absence of SCC in said sample.

25. A method according to Claim 24, wherein said antibody binds to a MFP having a sequence comprising the amino acid sequence of SEQ ID. No.: 13.

26. A method according to Claim 24, wherein said antibody binds to a MFP having a sequence comprising the amino acid sequence of SEQ ID. No.: 15.

27. A method according to Claim 24, wherein said antibody binds to a MFP having a sequence comprising the amino acid sequence of SEQ ID. No.: 17.

28. A method according to Claim 24, wherein said antibody binds to a MFP having a sequence comprising the amino acid sequence of SEQ ID. No.: 19.

29. A method according to Claim 24, wherein said antibody binds to a MFP having a sequence comprising the amino acid sequence of SEQ ID. No.: 21.

30. A method according to Claim 24, wherein said antibody binds to a MFP having a sequence comprising the amino acid sequence of SEQ ID. No.: 24.

31. A method according to Claim 24, wherein said antibody further comprises a detectable label.

32. The method according to Claim 24, wherein said epithelial cells are selected from the group consisting of squamous cells, keratinocytes, mucosal epithelial cells, gastrointestinal epithelial cells, corneal epithelia of the eye, and epithelial cells of the urinary and reproductive tract.

33. The method according to Claim 24, wherein said sample is a tissue sample.

34. The method according to Claim 24, wherein said sample is a urine sample.

35. The method according to Claim 24, wherein said sample is a blood sample.

36. A method of identifying a candidate binding agent capable of binding a MFP of a laminin 5 alpha 3 G4 and/or G5 domain or subdomain thereof comprising the steps of:

a) contacting a sample comprising a MFP of a laminin 5 alpha 3 G4-G5 domain or subdomain with a composition comprising one or more candidate binding agent under conditions effective to permit binding between one or more of said candidate binding agent and said MFP; and

b) detecting the binding of said candidate binding agent to said MFP.

37. A method according to Claim 36, wherein said candidate binding agent is selected from the group consisting of antibodies and fragments thereof, small molecules, polypeptides, and aptamers.

38. A method of screening for candidate agents that inhibit SCC tumorigenesis comprising the steps of:

a) subcutaneously injecting nude mice with a suspension comprising:

i) Ras/IKB transformed epithelial cells;

ii) a migration facilitating protein (MFP) of a laminin G4 and/or G5 domain or subdomain;

iii) one or more candidate agents; and

b) determining the presence or absence of one or more tumors.

39. A method according to Claim 38, wherein said candidate agent is selected from the group consisting of antibodies and fragments thereof, small molecules, polypeptides, and aptamers.

40. A method according to Claim 38, wherein said candidate agent comprises an antibody capable of binding a MFP of a laminin 5 G4 and/or G5 domain or subdomain thereof.

41. A method of evaluating the effect of a candidate SCC drug in a patient comprising the steps of:

a) detecting the presence of an MFP associated with SCC in a tissue sample from a patient diagnosed with a SCC tumor prior to treatment with a candidate drug; and

b) detecting the presence of a said MFP in a tissue sample from said patient following treatment with said candidate drug;

wherein a decrease in said MFP following treatment with said candidate drug indicates that said candidate drug is effective in treating said SCC in said patient.

42. A method according to Claim 41, wherein said candidate agent is selected from the group consisting of antibodies and fragments thereof, small molecules, polypeptides, and aptamers.

43. A method according to Claim 41, wherein said candidate agent comprises an antibody capable of binding a MFP of a laminin 5 G4 and/or G5 domain or subdomain thereof.